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**Bibliography**

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Summary

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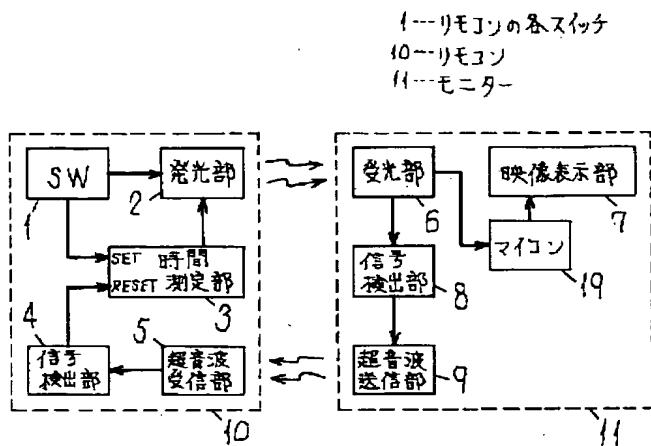
(57) [Abstract]

[Objects of the Invention] It aims at offering the outstanding quality-of-image adjusting device which can obtain the optimal quality of image automatically with the position which looks at a monitor.

[Elements of the Invention] While forming the signal-detection section 8 which sends the instructions which detect reception of the lightwave signal from the ultrasonic transmitting section 9 and remote control 10 in the monitor 11 interior, and transmit an ultrasonic signal to the ultrasonic transmitting section 9 The timing-measurement section 3 which measures time after the arbitrary switches 1 of the ultrasonic receive section 5, the signal-detection section 4 which detects reception of an ultrasonic wave, and remote control are pushed until it detects reception of an ultrasonic wave is formed in the remote control 10 interior. It is not necessary to measure the distance of a televiwer and a monitor by sending the hour-entry output of the timing-measurement section 3 to a monitor 11, and to carry out quality-of-image adjustment manually purposely, and the optimal quality of image according to distance is automatically obtained by connecting the output of the timing-measurement section 3 to a light-emitting part 2.

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CLAIMS

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[Claim(s)]

[Claim 1] The quality-of-image adjusting device characterized by having a graphic display means, a remote-control means to control the function, the aforementioned graphic display means and a range-measurement means to measure the distance between the aforementioned remote-control means, and the quality-of-image equalization circuit adjusted to the quality of image corresponding to the distance acquired with the aforementioned range-measurement means.

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## DETAILED DESCRIPTION

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### [Detailed Description of the Invention]

#### [0001]

[Industrial Application] this invention is operating remote control (it considering as remote control hereafter) without carrying out quality-of-image adjustment of a display unit (it considers as a monitor hereafter), and if possible, it is related with the quality-of-image adjusting device to which it closes obtaining automatically the optimal quality of image of the monitor which saw from the position of those who are operating it.

#### [0002]

[Description of the Prior Art] The conventional quality-of-image adjusting device is explained below.

[0003] Drawing 2 shows the block diagram of the conventional quality-of-image adjusting device. In drawing 2, 12 is the quality-of-image adjustment switch of remote control 17, 13 is a light-emitting part, and these are constituted by the remote control 17 interior. The light sensing portion which receives the lightwave signal to which 14 is outputted from a light-emitting part 13, the graphic display section as which 15 displays an image, and 16 are a monitor's 18 quality-of-image adjustment switches, and these are constituted by the monitor 18 interior.

[0004] About the quality-of-image adjusting device constituted as mentioned above, the operation is explained below. First, if the quality-of-image adjustment switch 12 of remote control 17 was pushed, after the electrical signal showing quality-of-image information will be inputted into a light-emitting part 13 and will be changed into a lightwave signal, it is inputted into the light sensing portion 14 of the monitor 18 interior through space, and is transformed inversely by the electrical signal. The electrical signal outputted from a light sensing portion 14 is inputted into the graphic display section 15, and quality-of-image adjustment is performed. Moreover, even if it pushes the quality-of-image adjustment switch 16 with which the monitor 18 was equipped, quality-of-image adjustment is performed.

#### [0005]

[Problem(s) to be Solved by the Invention] However, since the positions to which it actually views and listens differed with the above-mentioned conventional composition even if a televiewer performs quality-of-image adjustment just before a monitor when a quality-of-image adjustment switch is in a monitor main part, it was difficult to optimize quality of image. Moreover, even when a quality-of-image

adjustment switch was in remote control, it had the trouble that a viewing-and-listening position had to adjust purposely.

[0006] this invention solves the above-mentioned conventional trouble, and it aims at offering the quality-of-image adjusting device which can obtain the optimal quality of image automatically with the position which views and listens to a monitor.

[0007]

[Means for Solving the Problem] In order to attain this purpose, the quality-of-image adjusting device of this invention is adjusted to the quality of image corresponding to the distance acquired with the graphic display means, a remote-control means to control the function, a graphic display means and a range-measurement means to measure the distance between remote-control means, and the range-measurement means.

[0008]

[Function] By performing remote control operation by this composition, without aiming at quality-of-image adjustment of a monitor, the distance of a televiwer and a monitor can be measured automatically and the optimal quality of image according to distance can be obtained.

[0009]

[Example] One example of this invention is explained below, referring to a drawing.

[0010] In drawing 1, for each switch of remote control 10, and 2, as for the timing-measurement section and 4, a light-emitting part and 3 are [ 1 / the signal-detection section and 5 ] ultrasonic receive sections, and these are constituted by the remote control 10 interior. For 6, as for the graphic display section and 8, a light sensing portion and 7 are [ the signal-detection section and 9 ] the ultrasonic transmitting sections, and these are constituted by the monitor 11 interior.

[0011] About the quality-of-image adjusting device constituted as mentioned above, the operation is explained using drawing 1. First, when the arbitrary switches 1 of remote control 10 are pushed, after the electrical signal showing the information on the pushed switch 1 is inputted into a light-emitting part 2 and changed into a lightwave signal, it is inputted into the light sensing portion 6 of the monitor 11 interior through space, and is transformed inversely by the electrical signal.

Functional operation which the electrical signal outputted from a light sensing portion 6 is inputted into the graphic display section 7, and a switch 1 expresses is performed. Moreover, the electrical signal outputted from a light sensing portion 6 is detected in the signal-detection section 8, and sends the instructions which transmit an ultrasonic signal to the ultrasonic transmitting section 9. The ultrasonic signal outputted from the ultrasonic transmitting section 9 is inputted into the ultrasonic receive section 5 of the remote control 10 interior through space. The signal-detection section 4 will send a detecting signal to the timing-measurement section 3, if it detects that the ultrasonic signal was inputted into the ultrasonic receive section 5. Here, the timing-measurement section 3 is set with the electrical signal inputted when a switch 1 is pushed, and is reset with the electrical signal

inputted from the signal-detection section 4. After measuring time after being set until it is reset in the timing-measurement section 3, inputting the hour entry into a light-emitting part 2 and being changed into a lightwave signal, it is inputted into the light sensing portion 6 of the monitor 11 interior through space, and is transformed inversely by the electrical signal. The electrical signal outputted from a light sensing portion 6 is inputted into a microcomputer 19. A microcomputer 19 computes the distance information of the acoustic velocity (generally ordinary temperature 340m/(second)) to the hour entry, the televiwer, and monitor which were inputted. The distance information signal outputted from a microcomputer 19 is inputted into the graphic display section 7, and performs optimal quality-of-image adjustment according to distance information.

[0012] As mentioned above, according to this example, the distance of a monitor and a televiwer is measured with an ultrasonic signal, and optimal quality-of-image adjustment according to the distance information is performed.

[0013] In addition, a hour-entry signal is not detected in the signal-detection section 8.

[0014]

[Effect of the Invention] As mentioned above, by preparing the composition for measuring the distance of a televiwer and a monitor, this invention does not need to carry out quality-of-image adjustment manually purposely, and can realize the outstanding quality-of-image adjusting device which can obtain automatically the optimal quality of image according to distance.

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DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

[Drawing 1] The block diagram of the quality-of-image adjusting device in one example of this invention

[Drawing 2] The block diagram of the conventional quality-of-image adjusting device

## [Description of Notations]

- 3 Timing-Measurement Section
- 5 Ultrasonic Receive Section
- 7 Graphic Display Section
- 9 Ultrasonic Transmitting Section
- 10 Remote Control
- 11 Monitor

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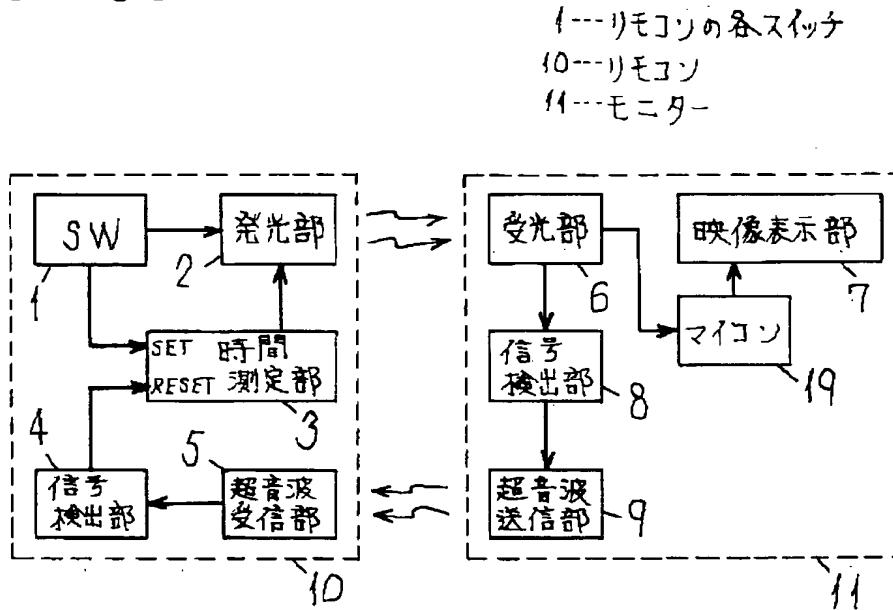
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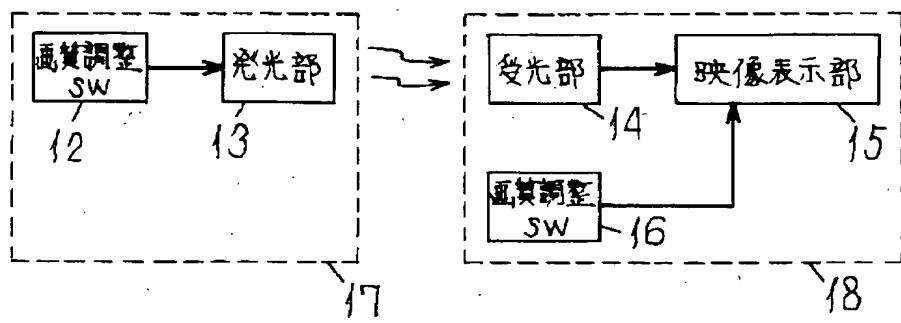
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## DRAWINGS

## [Drawing 1]



## [Drawing 2]



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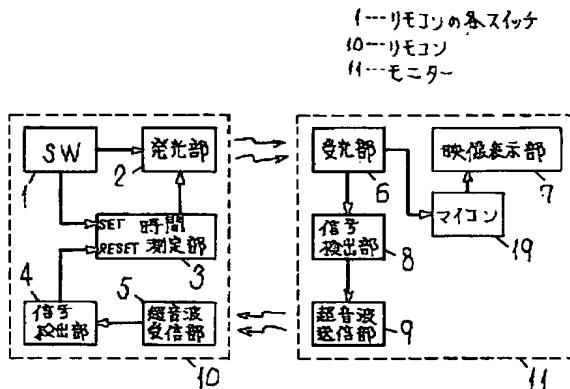
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(54)【発明の名称】 画質調整装置

(57)【要約】

【目的】 モニターを見る位置によって、最適な画質を自動的に得ることができる優れた画質調整装置を提供することを目的とする。

【構成】 モニター11内部には超音波送信部9とリモコン10からの光信号の受信を検出し超音波送信部9に超音波信号を送信する指令を送る信号検出部8を設けるとともにリモコン10内部には超音波受信部5と超音波の受信を検出する信号検出部4とリモコンの任意のスイッチ1が押されてから超音波の受信を検出するまでの時間を測定する時間測定部3を設け、時間測定部3の出力を発光部2に接続することにより、時間測定部3の時間情報をモニター11に送ることで視聴者とモニターとの距離を測定し、わざわざ手動で画質調整をする必要がなく、距離に応じた最適な画質が自動的に得られる。



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## 【特許請求の範囲】

【請求項1】 映像表示手段と、その機能を制御する遠隔制御手段と、前記映像表示手段と前記遠隔制御手段間の距離を測定する距離測定手段と、前記距離測定手段で得た距離に対応する画質に調整する画質調整回路とを備えたことを特徴とする画質調整装置。

## 【発明の詳細な説明】

## 【0001】

【産業上の利用分野】 本発明は映像表示装置（以下、モニターとする）の画質調整をしないで遠隔制御装置（以下、リモコンとする）を操作することで、操作している人の位置から見たモニターの最適な画質を自動的に得ることを可能ならしめる画質調整装置に関するものである。

## 【0002】

【従来の技術】 以下に従来の画質調整装置について説明する。

【0003】 図2は従来の画質調整装置のブロック図を示すものである。図2において、12はリモコン17の画質調整スイッチ、13は発光部であり、これらはリモコン17内部に構成される。14は発光部13から出力される光信号を受信する受光部、15は映像を表示する映像表示部、16はモニター18の画質調整スイッチであり、これらはモニター18内部に構成される。

【0004】 以上のように構成された画質調整装置について、以下その動作について説明する。まず、リモコン17の画質調整スイッチ12を押すと、画質情報を表す電気信号が発光部13に入力され光信号に変換された後、空間を介してモニター18内部の受光部14に入力され電気信号に逆変換される。受光部14から出力される電気信号は映像表示部15に入力され画質調整が行われる。又、モニター18に備えられた画質調整スイッチ16を押しても、画質調整は行われる。

## 【0005】

【発明が解決しようとする課題】 しかしながら上記の従来の構成では、モニター本体に画質調整スイッチがある場合、視聴者がモニターの直前で画質調整を行っても、実際に視聴する位置が異なっているため、画質を最適化することが困難であった。又、リモコンに画質調整スイッチがある場合でも、視聴位置によってわざわざ調整しなければならないという問題点を有していた。

【0006】 本発明は上記従来の問題点を解決するもので、モニターを視聴する位置によって、最適な画質を自動的に得ることができる画質調整装置を提供することを目的とする。

## 【0007】

【課題を解決するための手段】 この目的を達成するため本発明の画質調整装置は、映像表示手段と、その機能を制御する遠隔制御手段と、映像表示手段と遠隔制御手段間の距離を測定する距離測定手段と、距離測定手段で

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得た距離に対応する画質に調整するものである。

## 【0008】

【作用】 この構成によって、モニターの画質調整を目的としないでリモコン操作を行うことで、自動的に視聴者とモニターとの距離を測定し、距離に応じた最適な画質を得ることができる。

## 【0009】

【実施例】 以下本発明の一実施例について、図面を参照しながら説明する。

【0010】 図1において、1はリモコン10の各スイッチ、2は発光部、3は時間測定部、4は信号検出部、5は超音波受信部であり、これらはリモコン10内部に構成される。6は受光部、7は映像表示部、8は信号検出部、9は超音波送信部であり、これらはモニター11内部に構成される。

【0011】 以上のように構成された画質調整装置について、図1を用いてその動作を説明する。まず、リモコン10の任意のスイッチ1を押すと、押されたスイッチ1の情報を表す電気信号が、発光部2に入力され光信号に変換された後、空間を介してモニター11内部の受光部6に入力され電気信号に逆変換される。受光部6から出力される電気信号は映像表示部7に入力されスイッチ1の表す機能動作が行われる。又、受光部6から出力される電気信号は信号検出部8で検出され、超音波送信部9に超音波信号を送信する指令を送る。超音波送信部9から出力される超音波信号は空間を介してリモコン10内部の超音波受信部5に入力される。信号検出部4は超音波信号が超音波受信部5に入力されたことを検出すると時間測定部3に検出信号を送る。ここで、時間測定部3はスイッチ1が押されたときに入力される電気信号でセットされ、信号検出部4から入力される電気信号でリセットされる。セットされてからリセットされるまでの時間を時間測定部3で測定し、その時間情報を、発光部2に入力し光信号に変換された後、空間を介してモニター11内部の受光部6に入力され電気信号に逆変換される。受光部6から出力される電気信号はマイコン19に入力される。マイコン19は入力された時間情報と音速（一般に常温では、340m/秒）から、視聴者とモニターとの距離情報を算出する。マイコン19から出力される距離情報信号は映像表示部7に入力され、距離情報に応じた最適な画質調整を行う。

【0012】 以上のように本実施例によれば、超音波信号によりモニターと視聴者との距離を測定し、その距離情報に応じた最適な画質調整を行うものである。

【0013】 なお、時間情報信号は信号検出部8では検出されない。

## 【0014】

【発明の効果】 以上のように本発明は、視聴者とモニターとの距離を測定するための構成を設けることにより、わざわざ手動で画質調整をする必要がなく、距離に応じ

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た最適な画質を自動的に得ることができる優れた画質調整装置を実現できるものである。

【図面の簡単な説明】

【図1】本発明の一実施例における画質調整装置のブロック図

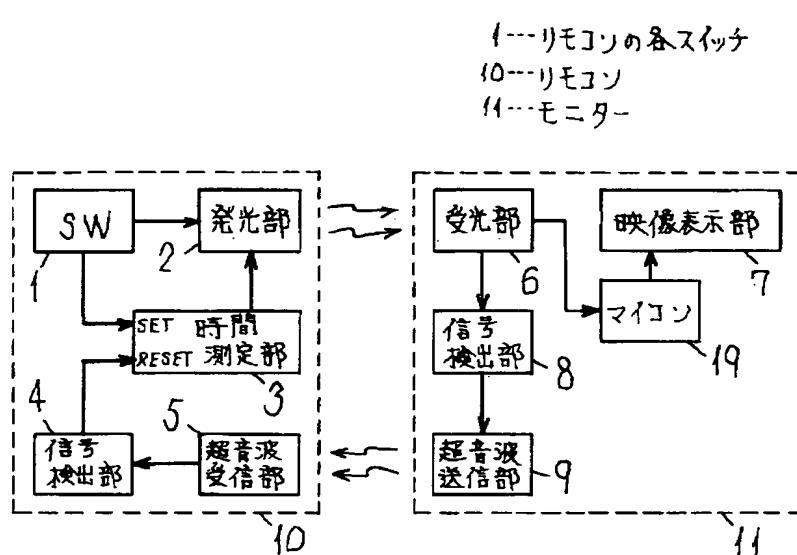
【図2】従来の画質調整装置のブロック図

【符号の説明】

\*

- \* 3 時間測定部
- 5 超音波受信部
- 7 映像表示部
- 9 超音波送信部
- 10 リモコン
- 11 モニター

【図1】



【図2】

